

EXHIBIT I

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA**

Epic Games, Inc.,

Plaintiff

v.

Apple Inc.,

Defendant

Civil Action No. 4:20-CV-05640-YGR

REBUTTAL EXPERT REPORT OF LORIN HITT, PH.D.

March 15, 2021

2. SUMMARY OF OPINIONS

46. Based on my analyses of available data, documents, and testimony in this case, I conclude that the relevant antitrust product market is the market for digital game transactions. I also conclude that evidence on both market structure and market outcomes are inconsistent with Apple having market power in the market for digital game transactions.¹²² Moreover, I conclude that even if, counter to fact, the relevant antitrust market was Epic’s proposed “iOS App Distribution Market,” Apple would be constrained by many factors from exercising market power.

47. **Market Definition** (§3): As discussed by Professor Schmalensee, the App Store is a two-sided transaction platform that connects and serves both app developers and consumers who use apps. The product that Apple jointly provides app developers (such as Epic) and app consumers is transactions that facilitate the exchange of playable digital game content (including game updates) and in-app purchase of game content, which I call “digital game transactions.” From both the perspective of developers and consumers, the App Store competes with other digital game transaction platforms in this market.

48. For developers, digital game transactions on other digital game transaction platforms are substitutes for digital game transactions on the App Store (§3.1). Game developers are able to successfully carry out digital game transactions through many digital game transaction platforms besides the App Store (§3.1.1), both by providing games for playing on other devices as well as by charging for iOS game features and content through other means and on other devices. In addition, developers consider alternative game transaction platforms as substitutes for the App Store when making decisions about where and how to generate revenue from developing games or investing in existing games (§3.1.2). These alternative game transaction platforms provide substitutes for game transactions through the App Store generally and for individuals who own iOS devices specifically (§3.1.3).

49. For consumers, digital game transactions on other digital game transaction platforms are substitutes for digital game transactions on the App Store (§3.2). Consumers have access to digital game transactions through multiple digital game transaction platforms (§3.2.1). Consumers therefore make digital game transactions

¹²² Throughout this report when discussing conclusions about Apple’s lack of market power, I use the term market power to mean not simply an ability to raise price above marginal cost (which is common in many competitive markets including those with differentiated products) but rather significant market power associated with the ability to exclude competition and meaningfully increase market wide prices and reduce market wide output.

through multiple digital game transaction platforms (§3.2.2). In addition, consumers can easily switch to other digital game transaction platforms to make digital game transactions (§3.2.3). In particular, empirical evidence from the entry of Fortnite on new game transaction platforms and devices illustrates that consumers can and do substitute game transactions through the App Store for game transactions on other platforms (§3.2.4).

50. Qualitative evidence from Apple and other digital game transaction platforms corroborates that the App Store competes with these other digital game transaction platforms (§3.3). Moreover, the available evidence supports limiting the relevant market to digital game transactions rather than all app transactions (§3.4).

51. Dr. Evans has not defined the proper relevant market in this matter (§3.5). While he acknowledges that the App Store provides transactions between consumers and developers, he ignores this fact and instead incorrectly defines an alleged foremarket for smartphone operating systems and an alleged aftermarket for iOS app transactions (§§3.5.1 and 3.5.2). Dr. Evans' market definition is based on his claim that consumers and developers do not have good substitutes for smartphone apps; however, this again ignores that the product at issue in this matter is game transactions (§3.6). Moreover, Dr. Evans' conclusions regarding an alleged lack of substitutes for smartphone apps conflates app use and app transactions (§3.6.1) and is inconsistent with the fact that top apps are available on multiple devices or through a web browser on an iOS device (§3.6.2).

52. Dr. Evans' alleged markets for smartphone operating systems and iOS app distribution are therefore fundamentally flawed and not appropriate for this matter (§3.7). With regard to his alleged market for smartphone operating systems, he artificially separates mobile devices from their operating systems, and incorrectly focuses on whether operating systems for smartphones are substitutes for operating systems for other devices. Dr. Evans also incorrectly ignores operating systems for tablets (§3.7.1). With regard to his alleged market for iOS app distribution, Dr. Evans incorrectly clusters all apps into a single market even though app transactions for different types of app face different competitive conditions (§3.7.2).

53. Dr. Evans case study of Fortnite's experience on the App Store cannot be used to support a hypothetical monopolist test as it is not a market-wide event (§3.8.1). Dr. Evans' analysis overstates the proportion of single-homing iOS players of Fortnite (§3.8.2).

54. Dr. Evans' conclusions regarding his alleged market for iOS app distribution is based on a flawed survey conducted by Professor Rossi. Professor Rossi's survey, as well as the way that Dr. Evans' relies on it, cannot be used to establish that there is a relevant market for iOS app distribution (§3.9).

55. Professor Athey's opinions about device complementarity, and Dr. Evans' focus on smartphone operating systems and/or device substitution, lead to faulty conclusions as they do not apply to game transactions across transactions platforms, which are substitutes. (§3.10). Dr. Evans ignores qualitative evidence showing that the App Store competes with other transaction platforms that are substitutes for the transactions provided by the App Store (§3.11).

56. Lastly, Dr. Evans incorrectly asserts that the relevant geographic market is global except for China for both his alleged smartphone operating system market and his iOS app distribution market. This is incorrect for several reasons, and the proper geographic market in this matter is limited to consumers in the U.S. and developers in and outside the U.S. who can sell to U.S. consumers (§3.12).

57. **Market Power** (§4): Key empirical features of the marketplace, including market shares, barriers to entry, entry of competitors, prices and commissions, output, and quality, show that Apple does not possess market power in the market for digital game transactions.

58. First, the structure of the market for digital games transactions is inconsistent with Apple having market power in this market. Apple's share of the digital game transaction market is inconsistent with market power (§4.1.1). Moreover, potential barriers to entry have not kept new game transaction platforms from entering the market since the launch of the App Store (§4.1.2). Related, direct distribution of games by developers, web-based game streaming services, and sales of games in other retail channels further constrain Apple from exercising any market power (§4.1.3).

59. Second, even when considering Epic's proposed iOS App Distribution Market, Apple's ability to exercise market power is constrained by many factors. The fact that consumers and developers multi-home across devices and digital transaction platforms constrains Apple from exercising any alleged market power (§4.2.1). Consumers' ability to switch from iOS devices to Android devices constrains Apple from exercising any alleged market power. While Dr. Evans asserts that there are high switching costs between iOS and Android devices, his analysis fails to

demonstrate that consumers are locked-in to iOS devices, conflates innovation and consumer benefits received from iOS devices that cause repeat purchases with switching costs, and ignores survey evidence indicating that consumers do in fact switch between Android and iOS devices (§4.2.2). Any potential Apple market power is constrained because developers have many alternative ways to earn revenue from iOS app users while avoiding paying Apple commissions such as selling digital content, digital currencies or subscriptions either through another transaction platform or directly from the developer, as well as earning revenue through other means that are not subject to Apple commissions (e.g., advertising or promotions). In fact, contrary to Dr. Evans' claims, Apple has very few restrictions on developers' ability to monetize apps and the evidence shows that developers are able to use a web browser on an iOS device to provide app content or monetize an iOS app, which limits Apple's market power (§4.2.3).

60. Third, direct evidence on market outcomes does not support the conclusion that Apple has market power in the market for digital game transactions.

- There is no evidence that Apple has exercised market power to increase commission rates or prices. The commission rate charged by the App Store is competitive with the rate charged by other digital game transaction platforms, and reductions in commission rates charged by the App Store over time since launch are inconsistent with an exertion of market power. Changes in the average commission rate charged by the App Store and the average dollar value of commission paid to Apple are also inconsistent with Apple having market power. Evidence also contradicts the claim that market-wide commissions for game transactions are supracompetitive (§4.3.1).
- Evidence shows that Apple has not exercised market power to reduce output. Total output of digital gaming transactions has increased over time. Total output of digital game transactions on the App Store has also increased over time and at a rate greater than the growth rate of the market as a whole. Sales of Apple's devices as well as other devices for games have increased over time (§4.3.2).
- Finally, evidence shows that Apple has not exercised market power to reduce quality (§4.3.3). To the contrary, the combination of steady or reduced commissions along with increased quantity implies a reduction in quality adjusted prices over time, inconsistent with the exercise of monopoly power.

61. Dr. Evans asserts that Apple's market power is reflected in high App Store profit margins relative to what he claims are comparable online marketplaces for

consumers and merchants. However, the evidence presented by Dr. Evans relying on analyses from Mr. Barnes misrepresents Apple's business and its relevant economic margins and does not show that Apple possesses market power (§4.3.4).

62. Dr. Evans' claim that Apple has monopoly power in the iOS app distribution market is without basis (§4.4). He purports to show this based on five indicators, however, for each of these indicators, he reaches an incorrect conclusion. Dr. Evans' assertion that Apple has a 100 percent share of the iOS app distribution market is based on his flawed market definition; Apple has a much lower share of the relevant market for this matter, the game transactions market (§4.4.1). Dr. Evans' analysis of what he considers to be the App Store's profit market is unreliable and does not indicate that Apple is a monopolist (§4.4.2). Dr. Evans' claim that Apple's commission rate is supracompetitive is inconsistent with market facts (§4.4.3). Dr. Evans' assertion that Apple's behavior with large developers reflects monopoly power is flawed and in fact is consistent with Apple ensuring a competitive playing field for all developers (§4.4.4). Finally, Dr. Evans' conclusion that there are high barriers to entry is based on circular logic, ignores entry by competing transaction platforms, and fails to appreciate how Apple's App Store policies ensure that apps transacted on the App Store are safe, secure, and high-quality (§4.4.5).

63. ***Competitive Effects*** (§5): The evidence is inconsistent with Apple exercising market power to harm competition and inflict substantial anticompetitive effects in the market for digital game transactions. Since the launch of the App Store, several new game transaction platforms that compete with the App Store have entered the market. New streaming services, at least some of which should be considered part of the game transaction market, have also launched recently. The evidence does not show that Apple charges supracompetitive prices or that prices in the market are supracompetitive. In addition, the evidence does not show a reduction in output. Lastly, the evidence does not show that Apple has harmed competition by reducing quality.

64. Dr. Evans and Professor Athey, on the other hand, have not established that Apple's conduct has caused harm to competition or substantial anticompetitive effects (§6). Dr. Evans' conclusion that commission rates would fall absent Apple's challenged conduct is based on a flawed thought experiment (§6.1). He has also ignored the pro-competitive benefits offered by Apple's "walled garden" iOS ecosystem (§6.2.1). Instead, he provides "case studies" which, rather than showing the alleged anticompetitive effects of Apple's challenged conduct, show that

consumers and developers would actually be worse off in his hypothetical but-for world (§6.2.2).

65. Professor Athey similarly has not identified the competitive harm from Apple’s “walled garden” iOS ecosystem (§6.3). Instead, she provides a conceptual analysis of “economic middleware” and its potential role in cross-platform app delivery – in effect arguing that forced interoperability would increase competition. However, Professor Athey’s assertion that “multi-platform app stores” would provide “economic middleware” to increase competition is without merit. She ignores the fact that “multi-platform app stores” typically do not increase developers’ ability to develop apps for specific operating systems and may in fact generate additional costs for consumers and developers (§6.3.1.1). She also ignores the fact that Apple already allows both technical middleware and “economic middleware,” and developers already have effective methods for offering cross-platform progression, monetization, and play (§6.3.1.2). Like Dr. Evans, Professor Athey has not identified the competitive harm from Apple’s challenged conduct and she has ignored the benefits of Apple’s “walled garden” iOS ecosystem. Moreover, her “case studies” demonstrate that consumers and developers would be worse off in her hypothetical but-for world with “multi-platform app stores” (§6.3.2).

66. Finally, Dr. Evans’ claim that Apple is a “sleepy monopolist” is inconsistent with the evidence. Apple has introduced significant innovations since the launch of the App Store that improve the quality of transactions for consumers and developers (§6.4 and Appendix F).